What Is Claimed Is:

1. A method to help ascertain the presence or absence of an object in a three-dimensional volume represented by a plurality of voxels, wherein the object is smaller in at least one dimension than a linear dimension of the voxels, the method comprising the steps of:

(a) radiation scanning the three-dimensional volume to determine a property of each of a plurality of voxels representing the three-dimensional volume;

(b) identifying voxels having similar values of said property to identify a contiguous group of voxels having said similar values; and

(c) identifying said contiguous group of voxels as potentially containing said object if a characteristic of said contiguous group has a predetermined value.

2. A method as set forth in claim 1, wherein said object is an explosive.

3. A method as set forth in claim 1, wherein said object is a delamination in a composite material.

4. A method as set forth in claim 1, wherein said scanning includes X-ray scanning.

5. A method as set forth in claim 1, wherein said characteristic is the mass of the contiguous group.

6. A method as set forth in claim 1, wherein said characteristic is the volume of the contiguous group.

7. A method as set forth in claim 1, wherein said three-dimensional volume includes luggage contents.

8. A method of detecting an explosive comprising the steps of:

(a) scanning a three-dimensional volume to determine the density of each of a plurality of voxels representing the three-dimensional volume;

(b) connecting and labeling voxels of the plurality of voxels which have similar densities;

(c) determining the volume of each contiguous region of voxels having similar densities;

(d) comparing the volume of each such contiguous region to a first threshold and identifying each such contiguous region which exceeds the first threshold as a suspect region;

(e) determining the mass of each suspect region; and

(f) comparing the mass of each suspect region to a second threshold and identifying each suspect region which exceeds the second threshold as a region potentially containing an explosive.

9. A method as set forth in claim 8 further comprising the step of:

further inspecting to confirm the presence or absence of an explosive.

10. A method as set forth in claim 9, wherein the further inspection includes manual inspection.

11. A method as set forth in claim 9, wherein the further inspection includes neutron interrogation.

12. An apparatus to help ascertain the presence or absence of an object in a three-dimensional volume represented by a plurality of voxels, wherein the object is smaller in at least one dimension than a linear dimension of the voxels, the apparatus comprising:

(a) a scanner to scan the object; and

(b) a processor which includes

(1) a contiguity identification module to determine a property of each of a plurality of voxels

representing the three-dimensional volume and to identify voxels having similar values of said property to identify a contiguous group of voxels having said similar values; and

(2) an object identification module to identify said contiguous group of voxels as potentially containing said object if a characteristic of said contiguous group has a predetermined value.

13. An apparatus as set forth in claim 12, wherein said object is an explosive.

14. An apparatus as set forth in claim 12, wherein said object is a delamination in a composite material.

15. An apparatus as set forth in claim 12, wherein said scanner is an X-ray scanner.

16. An apparatus as set forth in claim 12, wherein said characteristic is the mass of the contiguous group.

17. An apparatus as set forth in claim 12, wherein said characteristic is the volume of the contiguous group.

18. An apparatus as set forth in claim 12, wherein said three-dimensional volume includes luggage contents.

19. An apparatus to detect an explosive, comprising:

(a) a scanner to scan a three-dimensional volume to determine the density of each of a plurality of voxels representing the three-dimensional volume; and

(b) a processor which includes

(1) a contiguity identification module to connect and label voxels of the plurality of voxels which have similar densities; and

(2) an object identification module to

(i) determine the volume of each contiguous region of voxels having similar densities;

(ii) compare the volume of each such contiguous region to a first threshold and to identify each such contiguous region which exceeds the first threshold as a suspect region; ~~and~~

(iii) determine the mass of each suspect region; and

(iv) compare the mass of each suspect region to a second threshold and to identify each suspect region which exceeds the second threshold as a region potentially containing an explosive.

20. A method of detecting an explosive comprising the steps of:

(a) scanning a three-dimensional volume to determining the density of each of a plurality of voxels representing the three-dimensional volume;

(b) connecting and labeling voxels of the plurality of voxels which have similar densities;

(c) determining at least one of the volume and the mass of each contiguous region of voxels having similar densities; and

(d) comparing at least one of the volume and the mass of each contiguous region having similar densities to at least one threshold and identifying each region which exceeds a threshold as a region potentially containing an explosive.

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